

**BROWN AND
CALDWELL**

48 Leona Drive, Suite C
Middleborough, Massachusetts 02346
Tel. (508) 923-0879 • Fax. (508) 923-0894

PROJECT:
124862

SCALE:
1"= 80'

DRAWN:
R.J.F.

FILE:
Fig1_Flow.dwg

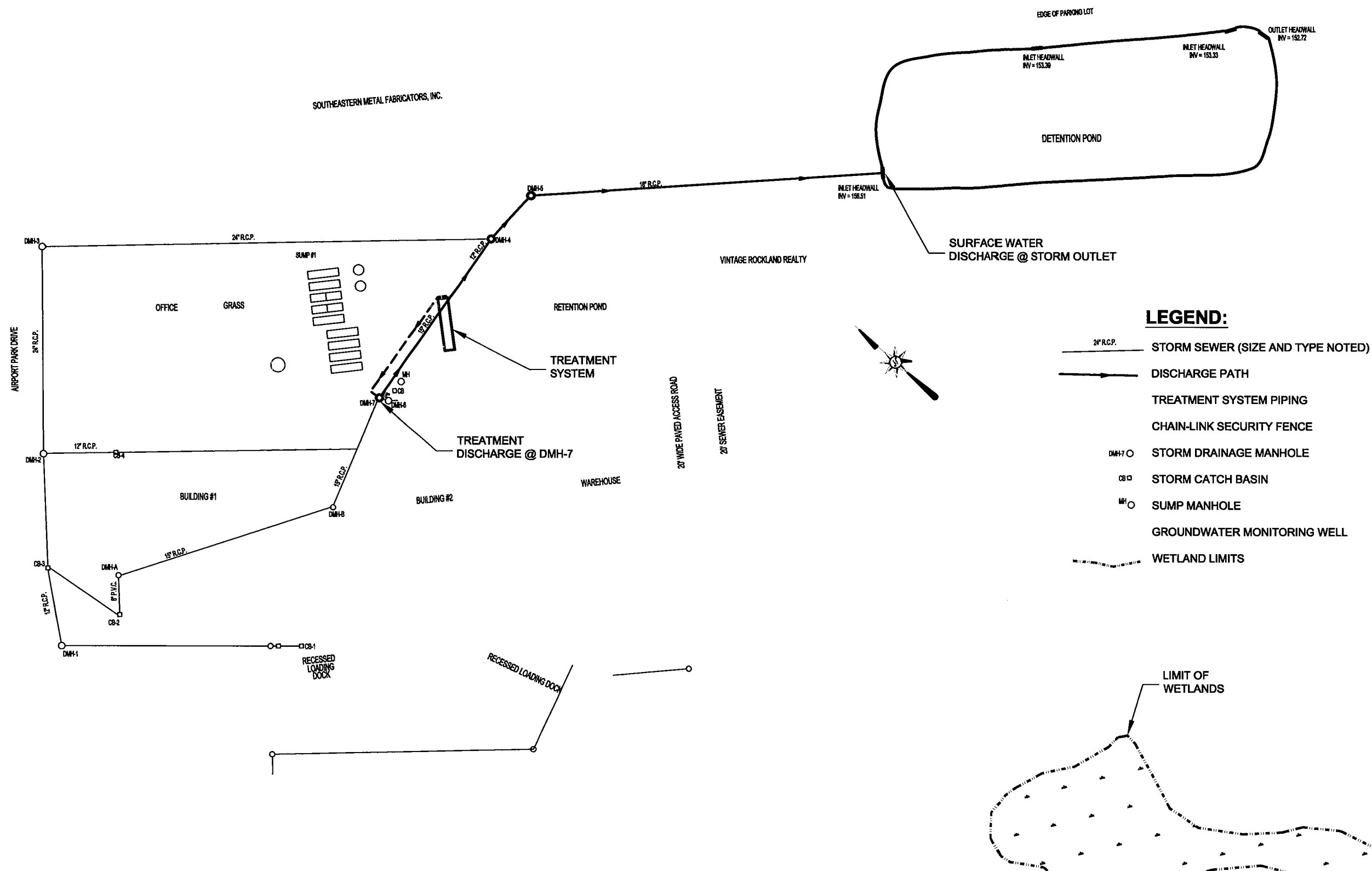
DATE:
10/6/05

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G.P.W.

FIGURE 1: PROCESS FLOW SCHEMATIC

NPDES - REMEDIATION GENERAL PERMIT
ROCKLAND, MASSACHUSETTS

PREPARED FOR:
ITW TACC



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Fig3_Site Plan

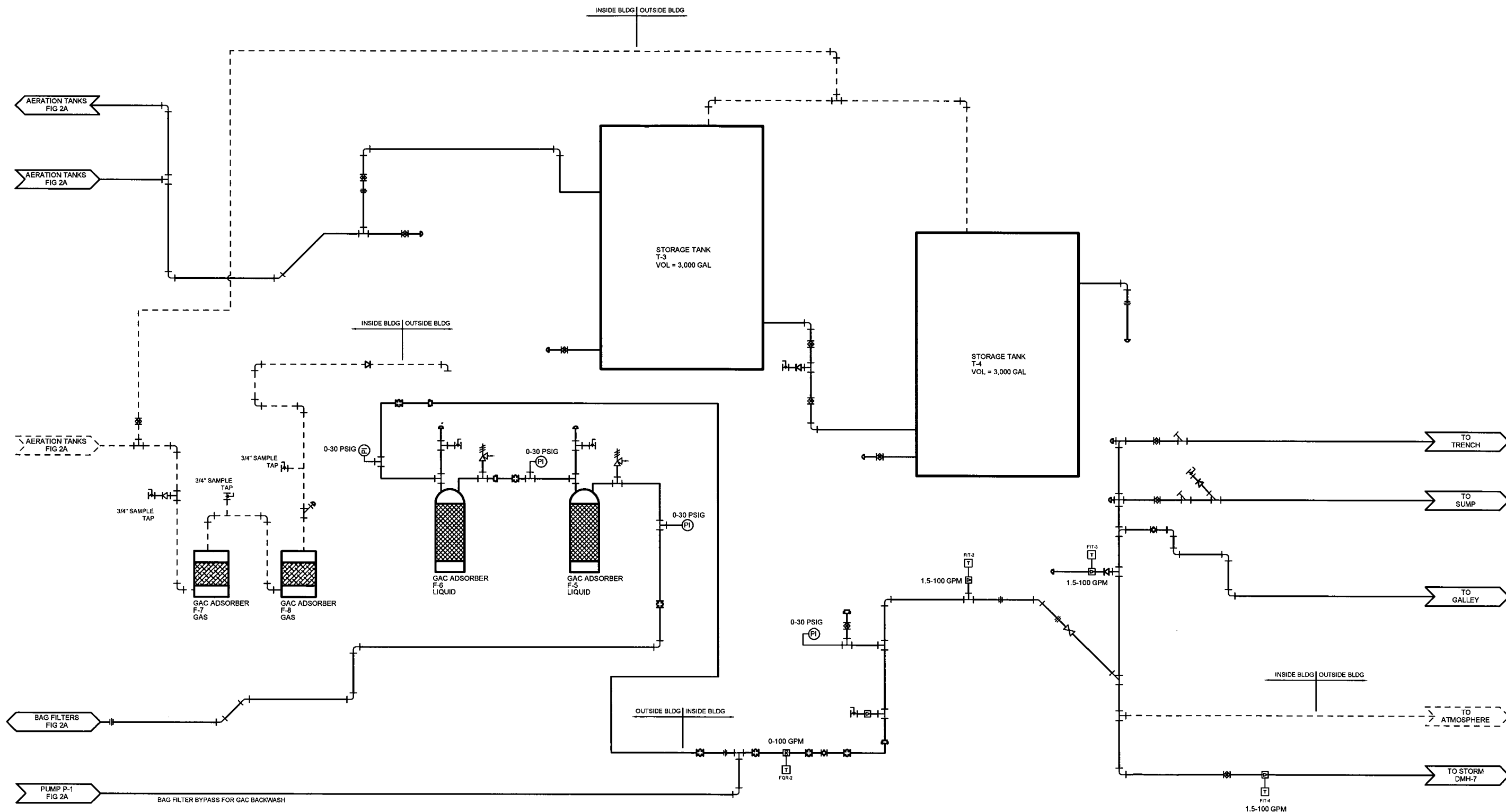
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10/6/05

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FIGURE 3: SITE PLAN

NPDES - REMEDIATION GENERAL PERMIT
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FILE:
Fig2_System.dwg

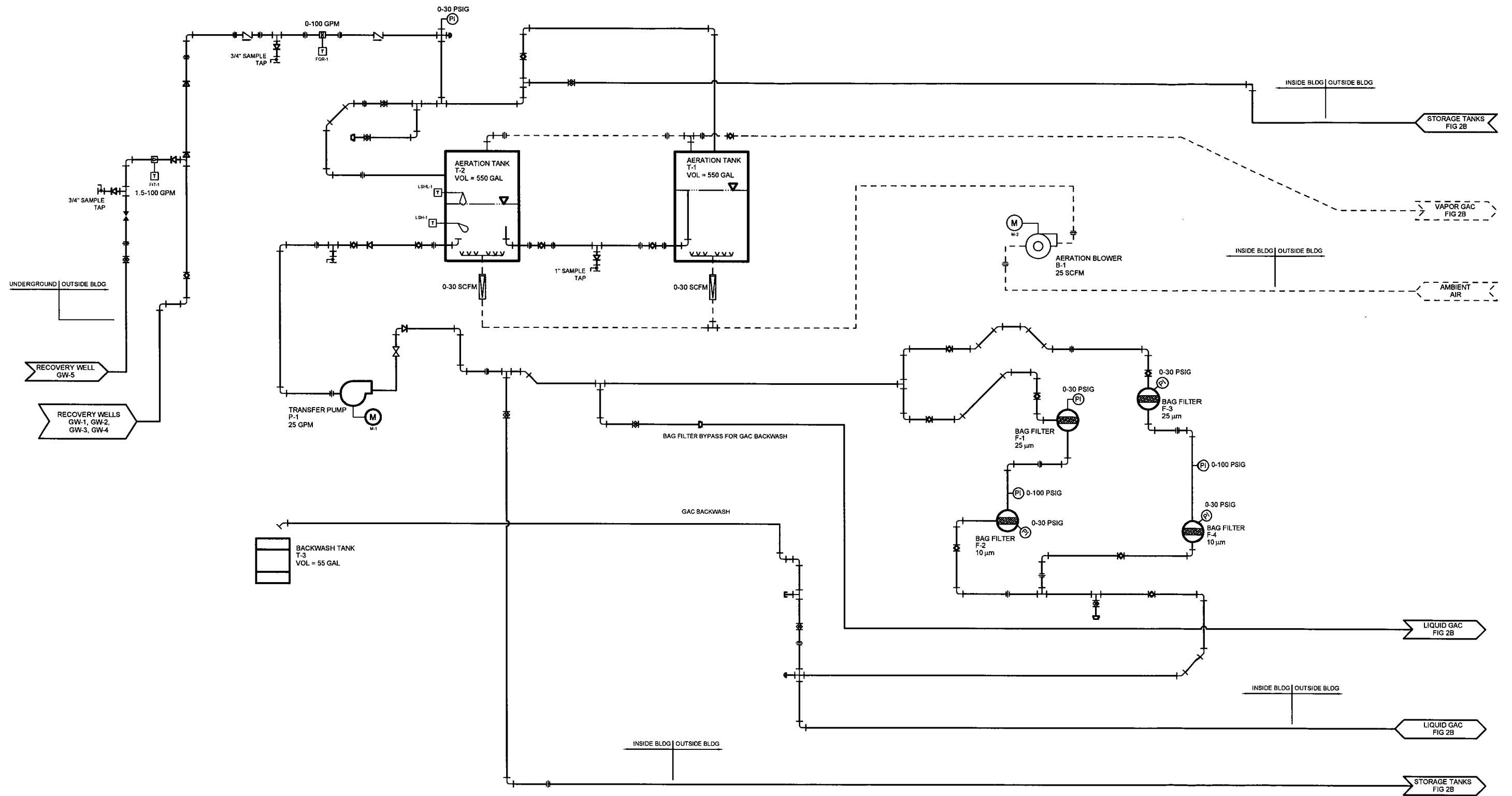
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FIGURE 2B: PROPOSED TREATMENT SYSTEM

NPDES - REMEDIATION GENERAL PERMIT
ROCKLAND, MASSACHUSETTS

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FIGURE 2A: PROPOSED TREATMENT SYSTEM

NPDES - REMEDIATION GENERAL PERMIT
ROCKLAND, MASSACHUSETTS

PREPARED FOR:
ITW TACC

48 Leona Drive, Suite C
Middleborough, MA 02346
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www.browncaldwell.com

GP
MAG 9/10/10
OCT 11

October 7, 2005

BROWN AND
CALDWELL

U.S. Environmental Protection Agency
RGP-NOC Processing
Municipal Assistance Unit (CMU)
One Congress Street, Suite 1100
Boston, MA 02114-2023

Subject: Notice of Intent For Coverage Under the Remediation General Permit
ITW TACC, 56 Air Station Industrial Park, Rockland, MA
RTN 4-0150

To Whom It May Concern:

On behalf of ITW TACC, Brown and Caldwell is submitting the attached Notice of Intent (NOI) in accordance with the new Remediation General Permit under the National Pollution Discharge Elimination System (NPDES) for the above referenced site. The site has previously been granted a NPDES permit exclusion, ~~MA-031-030~~ dated April 2, 2003, for the discharge covered by this NOI.

ITW TACC is a caulk and adhesive manufacturing facility located at 56 Air Station Industrial Park in Rockland, Massachusetts. An existing groundwater treatment system has been operating since May 2000 at an average pumping rate of one to ten gallons per minute. Groundwater has been pumped from one to five recovery wells screened within both the bedrock and shallow overburden aquifers. Currently, groundwater is treated above ground by the following unit operations: aeration, filtration, and adsorption. Treated groundwater is discharged into the subsurface upgradient of the recovery wells through a series of recharge trenches and/or sumps.

ITW TACC proposes to discharge treated groundwater to a nearby surface water through an existing stormwater sewer system. Treated groundwater would be discharged to an onsite drainage manhole (DMH-7), conveyed through the existing onsite stormwater sewer system, and ultimately discharge at an offsite storm outlet located approximately 300 feet southeast of the site at an unnamed detention pond. Anticipated average and maximum discharge flow rates are 10 gallons per minute (gpm) and 25 gpm, respectively. The detention pond currently receives stormwater runoff from catch basins at the facility, as well as runoff from other facilities.

Modeling calculations and historical system monitoring indicate that the treatment system will be capable of treating Volatile Organic Compound (VOC) parameters to below the effluent limits presented in Appendix III of the RGP. Based on historical iron samples, however, Brown and Caldwell requests that an initial operating and monitoring period of 3 months be allowed to comply with the total recoverable metals limitations presented in Appendix IV of the RGP. Preliminary computations indicate that proposed treatment system modifications to be implemented prior to surface water discharge will remove iron to below the Appendix IV limitation. These computations are provided as supplemental information to the NOI.

Site Background

The facility has been utilized as an adhesive and caulk manufacturing facility (TACC International) since 1970. ITW acquired TACC in 1999. A variety of chlorinated and non-chlorinated volatile organic compounds (VOCs) have impacted the soil, groundwater, and surface water at and in the vicinity of the site, from various releases resulting from the historical storage and use of manufacturing materials.

Based on the known site history, primarily adhesive manufacturing, it was established that the constituents of concern under the Massachusetts Contingency Plan (MCP) are VOCs. Brown and Caldwell took over the operation and maintenance of the treatment system while the site was in the Phase V Remedy Operation Status (ROS) in October 2003. The site is currently in ROS.

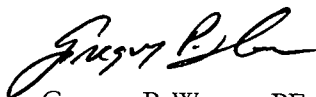
Soil and Groundwater Quality

The primary constituents of concern include (but are not limited to) the chlorinated compounds 1,1,1-Trichloroethane, Trichloroethene and associated degradation compounds including 1,1-Dichloroethane, 1,1-Dichloroethene, *cis*-1,2 Dichloroethene, Chloroethene, and Vinyl Chloride; non-chlorinated compounds Toluene, Xylenes, and Methyl Ethyl Ketone (MEK); and several light aliphatic textile spirit compounds including various hexanes and pentanes.

ITW TACC respectfully requests a formal response to proposed coverage under the RGP in Massachusetts. Complete contact information for the applicant (ITW TACC) and the preparer (Brown and Caldwell) is identified below. Please contact me if you have any questions or require any additional information.

Very truly yours,

BROWN AND CALDWELL



Gregory P. Werner, PE
Project Engineer

Enclosures

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General site information. Please provide the following information about the site:

a) Name of facility/site : ITW TACC		Facility/site address: ITW TACC	
Location of facility/site : longitude: <u>-70.933889</u> latitude: <u>42.150278</u>	Facility SIC code(s): 2891	Street: 56 Air Station Industrial Park	
b) Name of facility/site owner : ITW TACC		Town: Rockland	
Email address of owner: <u>Kateryan@itwtacc.com</u>	State: MA	Zip: 02370	County: Plymouth
Telephone no. of facility/site owner : (781) 878-7015			
Fax no. of facility/site owner : (781) 871-6727	Owner is (check one): 1. Federal ___ 2. State/Tribal ___ 3. Private <u>X</u> 4. other, if so, describe:		
Address of owner (if different from site): 3600 West Lake Avenue			
Street: 3600 West Lake Avenue			
Town: Glenview	State: IL	Zip: 60026-1215	County: Cook
c) Legal name of operator : Brown and Caldwell	Operator telephone no: (508) 923.0879		
	Operator fax no.: (508) 923.0894	Operator email: <u>gwerner@brwnccald.com</u>	
Operator contact name and title: Gregory P. Werner, Project Engineer			
Address of operator (if different from owner):	Street: 48 Leona Drive, Suite C		
Town: Middleborough	State: MA	Zip: 02346	County: Plymouth
d) Check "yes" or "no" for the following:			
1. Has a prior NPDES permit exclusion been granted for the discharge? Yes <u>X</u> No __, if "yes," number: <u>MA-031-030</u>			
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes __ No <u>X</u> , if "yes," date and tracking #:			
3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Yes <u>X</u> No __			
4. For sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting? Yes <u>X</u> No __			

<p>e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>If "yes," please list:</p> <p>1. site identification # assigned by the state of NH or MA: RTN 4-0150</p> <p>2. permit or license # assigned:</p> <p>3. state agency contact information: name, location, and telephone number:</p> <p>DEP SE Region, 56 Riverside Drive, Lakeville MA 02347, (508) 9469.2700</p>	<p>f) Is the site/facility covered by any other EPA permit, including:</p> <p>1. multi-sector storm water general permit? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> , if Y, number:</p> <p>2. phase I or II construction storm water general permit? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> , if Y, number:</p> <p>3. individual NPDES permit? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> , if Y, number:</p> <p>4. any other water quality related permit? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> , if Y, number:</p>
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2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed) including:

<p>a) Describe the discharge activities for which the owner/applicant is seeking coverage:</p> <p>The remediation system conducts batch, treatment of VOC contaminated groundwater. Treatment unit operations include: aeration, filtration, and adsorption. Effluent discharges to an onsite drain manhole and is conveyed through a stormwater sewer to an offsite detention pond.</p>		
<p>b) Provide the following information about each discharge:</p>	<p>1) Number of discharge points: 1</p>	<p>2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft3/s)? Max. flow <u>0.056</u></p> <p>Average flow <u>0.022</u> Is maximum flow a design value? Y <input checked="" type="checkbox"/> N <input type="checkbox"/></p> <p>For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.</p>
<p>3) Latitude and longitude of each discharge within 100 feet: pt.1: long. <u>-70.9088</u> lat. <u>42.15904</u>; pt.2: long. _____ lat. _____; pt.3: long. _____ lat. _____; pt.4: long. _____ lat. _____; pt.5: long. _____ lat. _____; pt.6: long. _____ lat. _____; pt.7: long. _____ lat. _____; pt.8: long. _____ lat. _____; etc.</p>		
<p>4) If hydrostatic testing, total volume of the discharge (gals): _____</p>		<p>5) Is the discharge intermittent <input checked="" type="checkbox"/> or seasonal _____?</p> <p>Is discharge ongoing Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>c) Expected dates of discharge (mm/dd/yy): start <u>Nov. 1, 2005</u> end <u>Unknown</u></p>		
<p>d) Please attach a line drawing or flow schematic showing water flow through the facility including:</p> <p>1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).</p>		

3. Contaminant information. In order to complete this section, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for **all** of the parameters listed in Appendix III. Historical data, (i.e., data taken no more than 2 years prior to the effective date of the permit) may be used if obtained pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, provided the data was analyzed with test methods that meet the requirements of this permit. Otherwise, a new sample shall be taken and analyzed.

a) Based on the analysis of the sample(s) of the untreated influent, the applicant must check the box of the sub-categories that the potential discharge falls within.

Gasoline Only	VOC Only <input checked="" type="checkbox"/>	Primarily Metals	Urban Fill Sites	Contaminated Sumps	Mixed Contaminants	Aquifer Testing
Fuel Oils (and Other Oils) only	VOC with Other Contaminants	Petroleum with Other Contaminants	Listed Contaminated Sites	Contaminated Dredge Condensates	Hydrostatic Testing of Pipelines/Tanks	Well Development or Rehabilitation

b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids	<input checked="" type="checkbox"/>		N/A							
2. Total Residual Chlorine	<input checked="" type="checkbox"/>		N/A							
3. Total Petroleum Hydrocarbons	<input checked="" type="checkbox"/>		N/A							
4. Cyanide	<input checked="" type="checkbox"/>		N/A							
5. Benzene	<input checked="" type="checkbox"/>		3	Grab	8260B	2	0	0	0	0
6. Toluene		<input checked="" type="checkbox"/>	3	Grab	8260B	2	3600	0.196	2073	0.113
7. Ethylbenzene	<input checked="" type="checkbox"/>		3	Grab	8260B	2	0	0	0	0
8. (m,p,o) Xylenes		<input checked="" type="checkbox"/>	3	Grab	8260B	10	110	0.006	36	0.002
9. Total BTEX ⁴		<input checked="" type="checkbox"/>	3	Grab	8260B	2	2110	0.115	1055	0.058

1. N/A = not analyzed

2. Samples collected pursuant to the MCP (310 CMR 40.0000). Analytical parameters were determined by site history. Samples were analyzed for VOCs per MCP 8260B. The analytical dilution factor applied by the laboratory was 100x.

12

3. Samples are representative of June, July, and August 2005 influent groundwater.

⁴ BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide ⁵ (1,2- Dibromo-methane)	X		3	Grab	8260B	0.1				
11. Methyl-tert-Butyl Ether (MtBE)	X		3	Grab	8260B	5.0				
12. tert-Butyl Alcohol (TBA)	X		N/A							
13. tert-Amyl Methyl Ether (TAME)	X		3	Grab	8260B					
14. Naphthalene	X		3	Grab	8260B	2				
15. Carbon Tetra-chloride	X		3	Grab	8260B	2				
16. 1,4 Dichlorobenzene	X		3	Grab	8260B	2				
17. 1,2 Dichlorobenzene	X		3	Grab	8260B	2				
18. 1,3 Dichlorobenzene	X		3	Grab	8260B	2				
19. 1,1 Dichloroethane		X	3	Grab	8260B	1	4000	0.218	3133	0.171
20. 1,2 Dichloroethane	X		3	Grab	8260B	2	0	0	0	0
21. 1,1 Dichloroethylene		X	3	Grab	8260B	2	2100	0.114	850	0.046
22. cis-1,2 Dichloro-ethylene		X	3	Grab	8260B	2	1300	0.071	1100	0.060
23. Dichloromethane (Methylene Chloride)	X		3	Grab	8260B	2	0	0	0	0
24. Tetrachloroethylene		X	3	Grab	8260B	2	92	0.005	57	0.003

⁵EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane		X	3	Grab	8260B	2	19000	1.036	13000	0.709
26. 1,1,2 Trichloroethane	X		3	Grab	8260B	2	0	0	0	0
27. Trichloroethylene		X	3	Grab	8260B	2	1400	0.076	946	0.052
28. Vinyl Chloride	X		3	Grab	8260B	2	0	0	0	0
29. Acetone	X		3	Grab	8260B	50	0	0	0	0
30. 1,4 Dioxane	X		3	Grab	8260B	50	0	0	0	0
31. Total Phenols	X		N/A							
32. Pentachlorophenol	X		N/A							
33. Total Phthalates ⁶ (Phthalate esters)	X		N/A							
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	X		N/A							
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	X		N/A							
a. Benzo(a) Anthracene	X		N/A							
b. Benzo(a) Pyrene	X		N/A							
c. Benzo(b) Fluoranthene	X		N/A							
d. Benzo(k) Fluoranthene	X		N/A							
e. Chrysene	X		N/A							

⁶The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min- imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	X		N/A							
g. Indeno(1,2,3-cd) Pyrene	X		N/A							
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	X		N/A							
h. Acenaphthene	X		N/A							
i. Acenaphthylene	X		N/A							
j. Anthracene	X		N/A							
k. Benzo(ghi) Perylene	X		N/A							
l. Fluoranthene	X		N/A							
m. Fluorene	X		N/A							
n. Naphthalene-		X	3	Grab	8260B	2	0	0	0	0
o. Phenanthrene	X		N/A							
p. Pyrene	X		N/A							
37. Total Polychlorinated Biphenyls (PCBs)	X		N/A							
38. Antimony	X		N/A							
39. Arsenic	X		N/A							
40. Cadmium	X		N/A							
41. Chromium III	X		N/A							
42. Chromium VI	X		N/A							

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min- imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper	X		N/A							
44. Lead	X		N/A							
45. Mercury	X		N/A							
46. Nickel	X		N/A							
47. Selenium	X		N/A							
48. Silver	X		N/A							
49. Zinc	X		N/A							
50. Iron		X	1	Grab	8260B	2	27000	1.472	27000	1.472
Other (describe):										

c) For discharges where **metals** are believed present, please fill out the following:

<p><i>Step 1:</i> Do any of the metals in the influent have a reasonable potential to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y <u>X</u> N <u>N</u></p>	<p>If yes, which metals? <u>Iron</u></p>
<p><i>Step 2:</i> For any metals which have reasonable potential to exceed the Appendix III limits, calculate the dilution factor (DF) using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metals: <u>Iron</u> DF: <u>1</u></p>	<p>Look up the limit calculated at the corresponding dilution factor in Appendix IV. Do any of the metals in the influent have the potential to exceed the corresponding effluent limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y <u>X</u> N <u>N</u> If "Yes," list which metals: <u>Iron</u>¹</p>

¹

Calculations indicate that the treatment system will be capable of precipitating and removing iron to below the effluent limit in Appendix IV. Calculations are provided as Supplemental Information.

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system: <input checked="" type="checkbox"/>						
b) Identify each applicable treatment unit (check all that apply):	Frac. tank	Air stripper <input checked="" type="checkbox"/>	Oil/water separator	Equalization tanks	Bag filter <input checked="" type="checkbox"/>	GAC filter <input checked="" type="checkbox"/>
	Chlorination	Dechlorination	Other (please describe):			
c) Proposed average and maximum flow rates (gallons per minute) for the discharge and the design flow rate(s) (gallons per minute) of the treatment system: Average flow rate of discharge <u>10 gpm</u> Maximum flow rate of treatment system <u>25 gpm</u> Design flow rate of treatment system <u>10-25 gpm</u>						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): Not Applicable						

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:	Direct <input type="checkbox"/>	Within facility <input type="checkbox"/>	Storm drain <input checked="" type="checkbox"/>	River/brook <input type="checkbox"/>	Wetlands <input type="checkbox"/>	Other (describe):
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: <u>Discharges into DMH-7 (onsite) through 12" RCP to DMH-4 (onsite) through 12" RCP to DMH-5 (onsite) through 18" RCP to detention pond (offsite).</u>						
c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water: 1. For multiple discharges, number the discharges sequentially. 2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.						
d) Provide the state water quality classification of the receiving water <u>Class C</u>						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water <u>0</u> cfs Please attach any calculation sheets used to support stream flow and dilution calculations.						
f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, for which pollutant(s)? Is there a TMDL? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, for which pollutant(s)?						

6. Results of Consultation with Federal Services: Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes <u>X</u> No <u> </u> Has any consultation with the federal services been completed? No <u>X</u> or is consultation underway? No <u>X</u> What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one): a "no jeopardy" opinion? <u> </u> or written concurrence <u> </u> on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?
b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge? Yes <u> </u> No <u>X</u> Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes <u> </u> No <u>X</u>

7. Supplemental information. :


Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name: ITW TACC

Operator signature:



Title: Project Engineer

Date: 10-07-2005

6. Results of Consultation with Federal Services: Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes <u>X</u> No _____ Has any consultation with the federal services been completed? No <u>X</u> or is consultation underway? Yes _____ No <u>X</u> What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one): a "no jeopardy" opinion? _____ or written concurrence _____ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?
b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge? Yes _____ No <u>X</u> Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes _____ No <u>X</u>

7. Supplemental information :

Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name: ITW TACC

Owner

Operator signature:

Kate Ryan

Title: Health, Safety - Environmental Manager

Date:

10/06/2005

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0507289-01
SYSTEM INFLUENT
Sample Matrix: WATER

Date Collected: 29-JUN-2005 10:45
Date Received : 30-JUN-2005
Date Reported : 08-JUL-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B				60 8260B		0706 15:23 TT	
Methylene chloride	ND	ug/l	500				
1,1-Dichloroethane	2800	ug/l	75.				
Chloroform	ND	ug/l	75.				
Carbon tetrachloride	ND	ug/l	50.				
1,2-Dichloropropane	ND	ug/l	180				
Dibromochloromethane	ND	ug/l	50.				
1,1,2-Trichloroethane	ND	ug/l	75.				
Tetrachloroethene	92.	ug/l	50.				
Chlorobenzene	ND	ug/l	50.				
Trichlorofluoromethane	ND	ug/l	250				
1,2-Dichloroethane	ND	ug/l	50.				
1,1,1-Trichloroethane	>10000	ug/l	50				
Bromodichloromethane	ND	ug/l	50.				
trans-1,3-Dichloropropene	ND	ug/l	50.				
cis-1,3-Dichloropropene	ND	ug/l	50.				
1,1-Dichloropropene	ND	ug/l	250				
Bromoform	ND	ug/l	200				
1,1,2,2-Tetrachloroethane	ND	ug/l	50.				
Benzene	ND	ug/l	50.				
Toluene	720	ug/l	75.				
Ethylbenzene	ND	ug/l	50.				
Chloromethane	ND	ug/l	250				
Bromomethane	ND	ug/l	100				
Vinyl chloride	ND	ug/l	100				
Chloroethane	140	ug/l	100				
1,1-Dichloroethene	220	ug/l	50.				
trans-1,2-Dichloroethene	ND	ug/l	75.				
Trichloroethene	720	ug/l	50.				
1,2-Dichlorobenzene	ND	ug/l	250				
1,3-Dichlorobenzene	ND	ug/l	250				
1,4-Dichlorobenzene	ND	ug/l	250				
Methyl tert butyl ether	ND	ug/l	100				
p/m-Xylene	ND	ug/l	100				
o-Xylene	ND	ug/l	100				
cis-1,2-Dichloroethene	800	ug/l	50.				
Dibromomethane	ND	ug/l	500				
1,2,3-Trichloropropane	ND	ug/l	500				
Styrene	ND	ug/l	100				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0507289-01
SYSTEM INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B cont'd				60 8260B		0706 15:23 TT	
Dichlorodifluoromethane	ND	ug/l	500				
Acetone	ND	ug/l	500				
Carbon disulfide	ND	ug/l	500				
2-Butanone	ND	ug/l	500				
4-Methyl-2-pentanone	ND	ug/l	500				
2-Hexanone	ND	ug/l	500				
Bromochloromethane	ND	ug/l	250				
Tetrahydrofuran	ND	ug/l	1000				
2,2-Dichloropropane	ND	ug/l	250				
1,2-Dibromoethane	ND	ug/l	200				
1,3-Dichloropropane	ND	ug/l	250				
1,1,1,2-Tetrachloroethane	ND	ug/l	50.				
Bromobenzene	ND	ug/l	250				
n-Butylbenzene	ND	ug/l	50.				
sec-Butylbenzene	ND	ug/l	50.				
tert-Butylbenzene	ND	ug/l	250				
o-Chlorotoluene	ND	ug/l	250				
p-Chlorotoluene	ND	ug/l	250				
1,2-Dibromo-3-chloropropane	ND	ug/l	250				
Hexachlorobutadiene	ND	ug/l	100				
Isopropylbenzene	ND	ug/l	50.				
p-Isopropyltoluene	ND	ug/l	50.				
Naphthalene	ND	ug/l	250				
n-Propylbenzene	ND	ug/l	50.				
1,2,3-Trichlorobenzene	ND	ug/l	250				
1,2,4-Trichlorobenzene	ND	ug/l	250				
1,3,5-Trimethylbenzene	ND	ug/l	250				
1,2,4-Trimethylbenzene	ND	ug/l	250				
Ethyl ether	ND	ug/l	250				
Isopropyl Ether	ND	ug/l	200				
Ethyl-Tert-Butyl-Ether	ND	ug/l	200				
Tertiary-Amyl Methyl Ether	ND	ug/l	200				
1,4-Dioxane	ND	ug/l	25000				
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	93.0	%		70-130			
Toluene-d8	100.	%		70-130			
4-Bromofluorobenzene	110.	%		70-130			
Dibromofluoromethane	99.0	%		70-130			
Volatile Organics by MCP 8260B				60 8260B		0708 09:37 TT	
1,1,1-Trichloroethane	11000	ug/l	200				
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	93.0	%		70-130			
Toluene-d8	98.0	%		70-130			
4-Bromofluorobenzene	98.0	%		70-130			
Dibromofluoromethane	94.0	%		70-130			

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0507289-01
SYSTEM INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B				60 8260B	0706 15:23 TT		
Tentatively Identified Compounds							
Dimethyl ether	100	ug/l					
Butane, 2-methyl-	260	ug/l					
Ethane, 1,1,2-trichloro-1,2	170	ug/l					
Pentane, 2-methyl-	370	ug/l					
Pentane, 3-methyl-	410	ug/l					
Hexane	420	ug/l					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0508160-03

INFLUENT

Sample Matrix:

WATER

Date Collected: 21-JUL-2005 10:10

Date Received : 21-JUL-2005

Date Reported : 28-JUL-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
<hr/>							
Volatile Organics by MCP 8260B				60 8260B	0726 01:40 BT		
Methylene chloride	ND	ug/l	500				
1,1-Dichloroethane	4000	ug/l	75.				
Chloroform	ND	ug/l	75.				
Carbon tetrachloride	ND	ug/l	50.				
1,2-Dichloropropane	ND	ug/l	180				
Dibromochloromethane	ND	ug/l	50.				
1,1,2-Trichloroethane	ND	ug/l	75.				
Tetrachloroethene	80.	ug/l	50.				
Chlorobenzene	ND	ug/l	50.				
Trichlorofluoromethane	ND	ug/l	250				
1,2-Dichloroethane	ND	ug/l	50.				
1,1,1-Trichloroethane	>10000	ug/l	50				
Bromodichloromethane	ND	ug/l	50.				
trans-1,3-Dichloropropene	ND	ug/l	50.				
cis-1,3-Dichloropropene	ND	ug/l	50.				
1,1-Dichloropropene	ND	ug/l	250				
Bromoform	ND	ug/l	200				
1,1,2,2-Tetrachloroethane	ND	ug/l	50.				
Benzene	ND	ug/l	50.				
Toluene	1900	ug/l	75.				
Ethylbenzene	ND	ug/l	50.				
Chloromethane	ND	ug/l	250				
Bromomethane	ND	ug/l	100				
Vinyl chloride	ND	ug/l	100				
Chloroethane	290	ug/l	100				
1,1-Dichloroethene	230	ug/l	50.				
trans-1,2-Dichloroethene	ND	ug/l	75.				
Trichloroethene	720	ug/l	50.				
1,2-Dichlorobenzene	ND	ug/l	250				
1,3-Dichlorobenzene	ND	ug/l	250				
1,4-Dichlorobenzene	ND	ug/l	250				
Methyl tert butyl ether	ND	ug/l	100				
p/m-Xylene	110	ug/l	100				
o-Xylene	ND	ug/l	100				
cis-1,2-Dichloroethene	1300	ug/l	50.				
Dibromomethane	ND	ug/l	500				
1,2,3-Trichloropropane	ND	ug/l	500				
Styrene	ND	ug/l	100				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0508160-03
INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B cont'd				60 8260B		0726 01:40 BT	
Dichlorodifluoromethane	ND	ug/l	500				
Acetone	ND	ug/l	500				
Carbon disulfide	ND	ug/l	500				
2-Butanone	ND	ug/l	500				
4-Methyl-2-pentanone	ND	ug/l	500				
2-Hexanone	ND	ug/l	500				
Bromochloromethane	ND	ug/l	250				
Tetrahydrofuran	ND	ug/l	1000				
2,2-Dichloropropane	ND	ug/l	250				
1,2-Dibromoethane	ND	ug/l	200				
1,3-Dichloropropane	ND	ug/l	250				
1,1,1,2-Tetrachloroethane	ND	ug/l	50.				
Bromobenzene	ND	ug/l	250				
n-Butylbenzene	ND	ug/l	50.				
sec-Butylbenzene	ND	ug/l	50.				
tert-Butylbenzene	ND	ug/l	250				
o-Chlorotoluene	ND	ug/l	250				
p-Chlorotoluene	ND	ug/l	250				
1,2-Dibromo-3-chloropropane	ND	ug/l	250				
Hexachlorobutadiene	ND	ug/l	100				
Isopropylbenzene	ND	ug/l	50.				
p-Isopropyltoluene	ND	ug/l	50.				
Naphthalene	ND	ug/l	250				
n-Propylbenzene	ND	ug/l	50.				
1,2,3-Trichlorobenzene	ND	ug/l	250				
1,2,4-Trichlorobenzene	ND	ug/l	250				
1,3,5-Trimethylbenzene	ND	ug/l	250				
1,2,4-Trimethylbenzene	ND	ug/l	250				
Ethyl ether	ND	ug/l	250				
Isopropyl Ether	ND	ug/l	200				
Ethyl-Tert-Butyl-Ether	ND	ug/l	200				
Tertiary-Amyl Methyl Ether	ND	ug/l	200				
1,4-Dioxane	ND	ug/l	25000				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	105.	%	70-130				
Toluene-d8	102.	%	70-130				
4-Bromofluorobenzene	111.	%	70-130				
Dibromofluoromethane	99.0	%	70-130				
Volatile Organics by MCP 8260B				60 8260B		0726 20:13 BT	
1,1,1-Trichloroethane	14000	ug/l	200				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	104.	%	70-130				
Toluene-d8	104.	%	70-130				
4-Bromofluorobenzene	113.	%	70-130				
Dibromofluoromethane	100.	%	70-130				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0508160-03
INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B				60 8260B	0726 01:40		BT
Tentatively Identified Compounds							
Unknown	290	ug/l					
Ethane, 1,1,2-trichloro-1,2	240	ug/l					
Pentane, 2-methyl-	510	ug/l					
Pentane, 3-methyl-	540	ug/l					
Hexane	620	ug/l					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0508160-04
INFLUENT (IRON)
Sample Matrix: WATER

Date Collected: 21-JUL-2005 10:25
Date Received : 21-JUL-2005
Date Reported : 28-JUL-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Plastic

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Total Metals by MCP 6000/7000 series				60 6010B			
Iron, Total	27.	mg/l	0.05	60 6010B	0726 18:45	0727 15:19	RW

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0510034-04
SYSTEM INFLUENT
Sample Matrix: WATER

Date Collected: 29-AUG-2005 12:30
Date Received : 31-AUG-2005
Date Reported : 08-SEP-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B				60 8260B		0906 14:47 RY	
Methylene chloride	ND	ug/l	2000				
1,1-Dichloroethane	2600	ug/l	300				
Chloroform	ND	ug/l	300				
Carbon tetrachloride	ND	ug/l	200				
1,2-Dichloropropane	ND	ug/l	700				
Dibromochloromethane	ND	ug/l	200				
1,1,2-Trichloroethane	ND	ug/l	300				
Tetrachloroethene	ND	ug/l	200				
Chlorobenzene	ND	ug/l	200				
Trichlorofluoromethane	ND	ug/l	1000				
1,2-Dichloroethane	ND	ug/l	200				
1,1,1-Trichloroethane	19000	ug/l	200				
Bromodichloromethane	ND	ug/l	200				
trans-1,3-Dichloropropene	ND	ug/l	200				
cis-1,3-Dichloropropene	ND	ug/l	200				
1,1-Dichloropropene	ND	ug/l	1000				
Bromoform	ND	ug/l	800				
1,1,2,2-Tetrachloroethane	ND	ug/l	200				
Benzene	ND	ug/l	200				
Toluene	3600	ug/l	300				
Ethylbenzene	ND	ug/l	200				
Chloromethane	ND	ug/l	1000				
Bromomethane	ND	ug/l	400				
Vinyl chloride	ND	ug/l	400				
Chloroethane	420	ug/l	400				
1,1-Dichloroethene	2100	ug/l	200				
trans-1,2-Dichloroethene	ND	ug/l	300				
Trichloroethene	1400	ug/l	200				
1,2-Dichlorobenzene	ND	ug/l	1000				
1,3-Dichlorobenzene	ND	ug/l	1000				
1,4-Dichlorobenzene	ND	ug/l	1000				
Methyl tert butyl ether	ND	ug/l	400				
p/m-Xylene	ND	ug/l	400				
o-Xylene	ND	ug/l	400				
cis-1,2-Dichloroethene	1200	ug/l	200				
Dibromomethane	ND	ug/l	2000				
1,2,3-Trichloropropane	ND	ug/l	2000				
Styrene	ND	ug/l	400				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0510034-04
SYSTEM INFLUENT

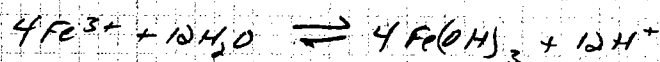
PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B cont'd				60 8260B		0906 14:47 RY	
Dichlorodifluoromethane	ND	ug/l	2000				
Acetone	ND	ug/l	2000				
Carbon disulfide	ND	ug/l	2000				
2-Butanone	ND	ug/l	2000				
4-Methyl-2-pentanone	ND	ug/l	2000				
2-Hexanone	ND	ug/l	2000				
Bromochloromethane	ND	ug/l	1000				
Tetrahydrofuran	ND	ug/l	4000				
2,2-Dichloropropane	ND	ug/l	1000				
1,2-Dibromoethane	ND	ug/l	800				
1,3-Dichloropropane	ND	ug/l	1000				
1,1,1,2-Tetrachloroethane	ND	ug/l	200				
Bromobenzene	ND	ug/l	1000				
n-Butylbenzene	ND	ug/l	200				
sec-Butylbenzene	ND	ug/l	200				
tert-Butylbenzene	ND	ug/l	1000				
o-Chlorotoluene	ND	ug/l	1000				
p-Chlorotoluene	ND	ug/l	1000				
1,2-Dibromo-3-chloropropane	ND	ug/l	1000				
Hexachlorobutadiene	ND	ug/l	400				
Isopropylbenzene	ND	ug/l	200				
p-Isopropyltoluene	ND	ug/l	200				
Naphthalene	ND	ug/l	1000				
n-Propylbenzene	ND	ug/l	200				
1,2,3-Trichlorobenzene	ND	ug/l	1000				
1,2,4-Trichlorobenzene	ND	ug/l	1000				
1,3,5-Trimethylbenzene	ND	ug/l	1000				
1,2,4-Trimethylbenzene	ND	ug/l	1000				
Ethyl ether	ND	ug/l	1000				
Isopropyl Ether	ND	ug/l	800				
Ethyl-Tert-Butyl-Ether	ND	ug/l	800				
Tertiary-Amyl Methyl Ether	ND	ug/l	800				
1,4-Dioxane	ND	ug/l	100000				
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	101.	%		70-130			
Toluene-d8	97.0	%		70-130			
4-Bromofluorobenzene	96.0	%		70-130			
Dibromofluoromethane	107.	%		70-130			
Volatile Organics by MCP 8260B				60 8260B		0906 14:47 RY	
Tentatively Identified Compounds							
Unknown Substituted Alkane	460	ug/l					
Hexane	400	ug/l					
Cyclopentane, methyl-	690	ug/l					

Comments: Complete list of References and Glossary of Terms found in Addendum I

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		124862	gpw	10-4-05		1/2
Project			Subject			
ITW-TALL NPDES PERMIT			IRON REMOVAL COMPUTATIONS			

PURPOSE: DETERMINE OXYGEN REQUIREMENT
TO PRECIPITATE IRON FROM WASTE STREAM.

REDOX REACTION:



MOLAR RATIO: $\left(\frac{1 \text{ mol O}_2}{4 \text{ mol Fe}^{2+}} \right)$ REQUIRED

GIVEN:

Flow, $Q = 10 \text{ gpm}$

Air Flow Rate, $\dot{V} = 25 \text{ cfm}$

Oxygen Transfer Efficiency, $\text{OTE} = 2\%$

Influent Concentration, $C_i = 27 \text{ mg/L}$

IRON MASS LOADING

Mass Flow Rate, $\dot{m} = Q (C_i)$

$$= 10 \frac{\text{gal}}{\text{min}} \left(\frac{27 \text{ mg}}{\text{L}} \right) \left(\frac{3.785 \text{ L}}{\text{gal}} \right) \left(\frac{\text{g}}{10^3 \text{ mg}} \right)$$

$$\dot{m} = 1.02 \frac{\text{g}}{\text{min}}$$

IRON MOLAR RATE

$$\dot{M} = \frac{1.02 \text{ g}}{\text{min}} \times \frac{1 \text{ mol}}{55.85 \text{ g}}$$

$$\dot{M} = 0.018 \text{ mol/min}$$

REQUIRED OXYGEN MOLAR RATE

$$\left(\frac{1 \text{ mol O}_2}{4 \text{ mol Fe}^{2+}} \right)_{\text{required}} \quad \dot{M}_{(\text{O}_2, \text{req})} = \left(\frac{0.018 \text{ mol}}{\text{min}} \right) / 4$$

$$\dot{M}_{(\text{O}_2, \text{req})} = 0.005 \text{ mol/min}$$

References/Notes

SNUEY, JR. & JENKINS
P. 384, WATER CHEMISTRY

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		124862	JDN	10-4-05		2/2
Project			Subject			
ITW TAIL NPDES PERMIT			IRON REMOVAL COMPUTATIONS			

ACTUAL OXYGEN MASS RATE

@ 21% O_2 and $\dot{V} = 25 \text{ cfm}$

$$\dot{V}_{O_2} = (25 \text{ cfm}) 0.21$$

$$\dot{V}_{O_2} = 5.25 \text{ cfm} \leftarrow O_2 \text{ flow rate into tank}$$

$$\begin{aligned} \dot{V}_{D.O.} &= \dot{V}_{O_2} (\text{OTE}) \\ &= (5.25 \text{ cfm})(0.21) \end{aligned}$$

$$\dot{V}_{D.O.} = 0.11 \text{ cfm} \leftarrow \text{Actual } O_2 \text{ flow rate as D.O.}$$

Assume only $\frac{1}{5}$ of the D.O. is available for Iron precipitation. \rightarrow Competition with air-stripping

$$\therefore \dot{V}_{D.O.} = 0.11 \text{ cfm} \left(\frac{1}{5} \right)$$

$$\dot{V}_{D.O.} = 0.022 \text{ cfm}$$

$$\dot{m}_{D.O.} = \left(\frac{0.022 \text{ ft}^3}{\text{min}} \right) \left(\frac{0.075 \text{ lb}}{\text{ft}^3} \right) \left(\frac{453.6 \text{ g}}{\text{lb}} \right)$$

$$\dot{m}_{D.O.} = 0.72 \frac{\text{g}}{\text{min}}$$

$$\dot{m}_{D.O.} = 0.72 \frac{\text{g}}{\text{min}} \left(\frac{\text{mol}}{32 \text{ g}} \right)$$

$$\dot{m}_{D.O.} = 0.023 \frac{\text{mol}}{\text{min}}$$

$$\dot{m}_{D.O.} @ 0.023 \frac{\text{mol}}{\text{min}} \gg \dot{m}_{\text{(oxygen)}} = 0.005 \text{ mol/min}$$

Sufficient O_2 delivered to precipitate iron from waste stream @ flow rates and OTE proposed.

References/Notes